

# PorthoMCL: Parallel orthology prediction using MCL for the realm of massive genome availability

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## Abstract

**Background:** Finding orthologous genes among multiple sequenced genomes is a primary step in comparative genomics studies. With the number of sequenced genomes increasing exponentially, comparative genomics becomes more powerful than ever for genomic analysis. However, the very large number of genomes in need of analysis makes conventional orthology prediction methods incapable of this task. Thus, an ultrafast tool is urgently needed.

**Results:** Here, we present PorthoMCL, a fast tool for finding orthologous genes among a very large number of genomes. PorthoMCL can be run on a single machine or in parallel on computer clusters. We have demonstrated PorthoMCL's capability by identifying orthologs in 2,758 prokaryotic genomes. The results are available for download at: <http://ehsan.ncu.go/porthomcl/>.

**Conclusions:** PorthoMCL is a fast and easy to run tool for identifying orthology among any number of genomes with minimal requirements. PorthoMCL will facilitate comparative genomics analysis with increasing number of available genomes thanks to the rapidly evolving sequencing technologies.

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## **Table of Contents Sample Acs Paper**

1. Understanding the eBook Sample Acs Paper
  - The Rise of Digital Reading Sample Acs Paper
  - Advantages of eBooks Over Traditional Books
2. Identifying Sample Acs Paper
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Sample Acs Paper
  - User-Friendly Interface
4. Exploring eBook Recommendations from Sample Acs Paper
  - Personalized Recommendations
  - Sample Acs Paper User Reviews and Ratings
  - Sample Acs Paper and Bestseller Lists
5. Accessing Sample Acs Paper Free and Paid eBooks
  - Sample Acs Paper Public Domain eBooks
  - Sample Acs Paper eBook Subscription Services
  - Sample Acs Paper Budget-Friendly Options
6. Navigating Sample Acs Paper eBook Formats

- ePub, PDF, MOBI, and More
- Sample Acs Paper Compatibility with Devices
- Sample Acs Paper Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Sample Acs Paper
  - Highlighting and Note-Taking Sample Acs Paper
  - Interactive Elements Sample Acs Paper
- 8. Staying Engaged with Sample Acs Paper
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Sample Acs Paper
- 9. Balancing eBooks and Physical Books Sample Acs Paper
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Sample Acs Paper
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Sample Acs Paper
  - Setting Reading Goals Sample Acs Paper
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Sample Acs Paper
  - Fact-Checking eBook Content of Sample Acs Paper
  - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
- 14. Embracing eBook Trends
  - Integration of Multimedia Elements
  - Interactive and Gamified eBooks

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